

hundred diameters. The pedicel (*pd*) which supports it is at least twice as long, of uniform diameter throughout, and very slender, in fact not much thicker than the flagellum. It is attached (*pd*¹) to the bottom of the calyx, exactly opposite to the point from which the contractile ligament (*r*) arises; but, unlike the latter, it appears to be totally incapable of contraction.

[To be continued.]

BIBLIOGRAPHICAL NOTICES.

The Natural History of the Tineina. By H. T. STAINTON.
Vol. X. 8vo. London: Van Voorst. 1867.

BEFORE saying anything upon the contents of the present volume, we must congratulate Mr. Stainton upon having reached the first halting-place in his laborious undertaking. He has every reason to glance back with satisfaction over the ten beautiful volumes which he has produced in the last thirteen years; and although he himself speaks, in a somewhat deprecatory tone, of his having failed to keep up to his original estimate of two volumes annually, we fancy that most of his readers will think that he has accomplished a gigantic amount of work.

The present volume contains the Natural History of twenty-four species of the genus *Gelechia*; so that, with the contents of the ninth volume, Mr. Stainton has illustrated forty-eight species of that difficult group. But such is the progress of discovery now-a-days that it seems difficult for an author even to keep pace with it. These forty-eight species are scarcely more than a fifth of the known European members of the genus, which now, according to Mr. Stainton's list of them, amount to 231; but of these the transformations of only about 100 are known, so that in reality we have in these two volumes the history of nearly half those species whose life has been thoroughly investigated.

In comparing the habits of these larvæ with those of the nearly allied genus *Depressaria*, in which the history of fifty-two out of eighty-one species was known in 1861, Mr. Stainton arrives at some curious results with regard to what may be called their botanical distribution. Thus, whilst nearly half the known larvæ of *Depressaria* feed upon Umbelliferous plants, no single *Gelechia* is known to derive its nourishment from that order; the Compositæ, which nourish fourteen *Depressariæ* (out of fifty-two), have only ten *Gelechiæ* (out of 100) attached to them; the Leguminosæ are patronized by about twice the number of the latter in proportion to the former genus; and the Caryophyllaceæ, which are quite free from the attacks of *Depressaria*, are known to harbour fourteen species of *Gelechia*.

It will be unnecessary for us to follow Mr. Stainton through his elaborate historical notice of the genus, or the histories of the twenty-four species here set forth; his mode of treatment of his subject must

be by this time well known to all entomologists. We can only wish him good speed in the continuation of his great work, and notice the fact that in subsequent volumes there will be some little departure from the plan hitherto adopted. The preceding volumes have often been seriously delayed by the difficulty of making up a set of histories of twenty-four species belonging to one or at most two genera; and this difficulty Mr. Stainton finds increasing upon him now that a considerable proportion of the species in some of the more extensive genera have been described and illustrated. In one instance, he tells us, a volume was kept waiting more than a year for the life-history of a single species. Under these circumstances he has resolved (we think judiciously) to give up the attempt to fill each volume with species of the same genus. We hope that he may receive the encouragement of a heavy subscription list.

The Tineina of Syria and Asia Minor. By H. T. STAINTON, F.L.S.
Svo. London: Van Voorst. 1867.

In the preface to the volume just noticed Mr. Stainton announces his intention of publishing a series of works upon the Tineina of various districts. The first of these, published early last year, is the little volume now before us, on the Tineina of Syria and Asia Minor; those in contemplation or in progress are on the members of the same beautiful group of Lepidoptera inhabiting Scandinavia, the Alps, and Southern Europe.

The inducement to the production of the present work was furnished by a collection of Microlepidoptera found in Palestine in 1865 by the Rev. O. Pickard Cambridge, and submitted to Mr. Stainton for identification and description. This led him to bring together all the papers published on the Tineina of western Asia, and to procure the loan of many of the type specimens; and in this volume we have the results of his investigations. It appears that, previously to Mr. Cambridge's visit, eleven collections containing species of Tineina had been made in Syria and Asia Minor by German travellers; and notices of these, with descriptions of new species, were published in various periodicals by MM. Zeller, Mann, and Lederer. Mr. Stainton has here reproduced the lists of species, and reprinted (in the original German) the descriptions of new forms, so as to bring into a focus, as it were, all the specially Levantine literature of the Tineina. To these he adds a catalogue of the species and descriptions of the new forms collected by Mr. Cambridge, descriptions of many of the species previously characterized by the above-mentioned authors, and of some other new species obtained from various sources. The number of species is 389, which are brought together in a table at the end of the book, showing, in parallel columns, the expeditions in which they were collected, with indications of their comparative abundance or rarity in the different localities.

Although unpretending in its form, this little work is one that must have taken no small labour in its preparation, and its importance is not to be measured by its bulk. In the present aspect of

natural history, no department occupies a more important place than that which treats of the geographical distribution of organized beings. It is from considerations founded upon this that nearly all the questions connected with the origin of species must be decided; and upon our solution of these depend, in great measure, our views of the philosophy of natural history. From this point of view it is almost impossible to overrate the importance of limited faunistic works, such as this of Mr. Stainton's; and its value is the greater as it relates to that remarkable region which constitutes the point of contact of the three great continents of the Old World.

The Fishes of Zanzibar. ACANTHOPTERYGII, by Lieut.-Colonel R. LAMBERT PLAYFAIR, Her Majesty's Political Agent and Consul at Zanzibar. PHARYNGOGNATHI &c., by ALBERT C. L. G. GÜNTHER, M.A., Ph.D., M.D. 4to. London: Van Voorst.

SINCE Adam Smith brought the phrase into vogue, the "division of labour" has been by most persons regarded with favour; but, somehow or other, naturalists were a long time before they found out the convenience of such an arrangement; and hence sprang a thick crop of controversies which had an awkward habit of developing into very pretty quarrels. May we hope that this contentious age has passed away, and that the outdoor observer, whose lamb-like virtues were aforesaid sounded in our ears, has, once and for ever, lain down comfortably with the closet collector, undeterred by his leonine dentition and claws. In the work now before us the compact of eternal friendship is signed, sealed, and delivered (to the public) by personages no less than Lieutenant-Colonel Playfair, some time Her Majesty's Consul and Political Resident at Zanzibar, and Dr. Albert Günther of the British Museum. To say that they have succeeded in their undertaking is almost unnecessary; for that would of course be expected from the gallant Scottish gentleman who, until recently, superintended British interests on the East Coast of Africa, and the able German philosopher who presides over the "bottle-department" of the National establishment in Great Russell Street. But we think a word of recognition is also due to the authorities of the Bombay Government, who have most liberally encouraged the present work. Ichthyology has never been a popular branch of study, and in consequence ichthyological books have seldom been lucrative undertakings. Few but the initiated can distinguish at sight between a Cyprinoid and a Salmonoid, and fewer still give themselves the trouble to undergo the course of scientific study which such an initiation, to be well founded, properly requires. Goggle eyes and scaly bodies of unsightly form, sometimes beset by confusing appendages, sometimes free from them, but always immersed in a liquid more or less resembling the mixture which advertising wine-merchants term "Golden Sherry," are the sole reminiscences which most persons carry away with them after looking over a collection of fishes in a museum. This arises from the necessity of the case. We know not how to make an ichthyological cabinet attractive to the public, and

can hardly wonder at its general apathy on this subject. All the more credit, therefore, to those who have so laudably aided in the publication of the 'Fishes of Zanzibar!'

That the value of this work will be fully recognized by the scientific there need be no doubt; we therefore deem it less necessary for us to expatiate upon it. It will be sufficient to quote from the "Introduction," that hitherto

No attempt has been made to illustrate the Fish-fauna of that large extent of coast stretching between the Straits of Bab-el-Mandeb and Mozambique. The labours of Lieut.-Colonel Playfair go far to supply this hiatus. In the course of a residence of many years at Aden and Zanzibar, during which he made frequent excursions to the African coast and the adjacent islands, he formed a considerable collection of Fish, of which the following pages contain a description.

This collection contains 500 distinct species, obtained in the following localities:—

At Zanzibar	428
Mozambique	10
Seychelles	27
Comoro Islands	11
Aden and its vicinity	23
Chagos archipelago	1

We have thought it advisable that there should be only one authority for new species, on which account each of the authors has attached his name to a moiety of the work; but it must not be imagined that we have worked otherwise than jointly and continuously throughout.

In conclusion, we have only to offer our thanks to the joint authors of this work. Dr. Günther will of course pursue the noiseless tenor of his way, and continue to earn the gratitude of all zoologists by his unwearied labours; while Col. Playfair, we can scarcely doubt, will find at his new post something to glean, even though the officials of the "Exploration Scientifique de l'Algérie" have been harvesting before him. May they again join forces to produce another work as satisfactory as the 'Fishes of Zanzibar!'

PROCEEDINGS OF LEARNED SOCIETIES.

ROYAL SOCIETY.

December 5, 1867.—Dr. William Allen Miller, Treasurer and Vice-President, in the Chair.

"On some Alterations in the Composition of Carbonate-of-Lime Waters, depending on the influence of Vegetation, Animal Life, and Season." By ROBERT WARINGTON, F.R.S., F.C.S.

In carrying out through a series of years the principles of the aquarium for sustaining animal life in a confined and limited portion of water through the medium of growing vegetation*, I had observed that, during the summer months of the year, a consider-

* Quarterly Journal of the Chemical Society, vol. iii. p. 52.